

REMARKS

Claims 20-56 are all the claims pending in the application. This Amendment amends claims 20 and addresses each point of objection and rejection raised by the Examiner. Favorable reconsideration is respectfully requested.

Applicant respectfully requests acknowledgement in the next Action of the Information Disclosure Statement filed May 20, 2004.

Specification Amendment

The specification is amended to correct an typographical error. No new matter is added.

Claim Rejections - 35 U.S.C. § 101

Applicant respectfully submits that the claims, as filed, are directed to a “new and useful, process, machine, manufacture, or composition of matter, or [a] new and useful improvement thereof,” as required by 35 U.S.C. § 101.

The method recited in independent claims 20, 39, 43, and 53, and the machines recited in independent claims 28 and 47, have real-world value as improvements on existing branch target buffers, as described in the present specification. For example, in independent claim 20, the acts of “concatenating each entry tag and entry bank number”, and “concatenating the IP tag and a number representing each of the plurality of banks,” and performing a concurrent comparison of this concatenated information provides advantages over the existing methods and machines, which perform comparisons as demonstrated in Figure 1 of the present application. As explained on page 3, under the prior art system of comparisons, it was forbidden to have the same valid tag in different ways of the same set. The claimed method is not so limited, which provides an immediate benefit to the public, as the concrete, useful, and tangible result is an improvement in performance over pre-existing methods. Similar advantages can be found in claims 28, 39, 43, 47, and 53. Reconsideration and withdrawal of the rejection under 35 U.S.C. § 101 are requested.

If the Examiner wishes to maintain this rejection, Applicant respectfully requests additional explanation of the basis for rejection in the next Action.

Double Patenting - 35 U.S.C. § 101

Claims 20-27, 29-34, 43-46 are rejected under 35 U.S.C. § 101 as claiming the same invention as various claims of U.S. Patent No. 6,757,815. Applicant respectfully requests that the Examiner modify the rejection to a judicial obviousness-type double patenting rejection. Although the pending claims are similar to those in the '815 patent, they are not identical. For example, independent claim 20 recites "concurrently comparing," whereas claim 1 of the '815 patent recites "simultaneously comparing." As another example, the preamble of claims 20 and 43 recite "a method," whereas the preambles of claims 1 and 18 of the '815 patent recites "a method of using a branch target buffer *having a plurality of banks*." While the differences between the two sets of claims may seem slight, they could become substantial in the enforcement context. For example, disagreements might arise regarding the difference of the preamble language of the claims and whether it is a limitation of the claim or not. Similarly, subtle changes in claims scope might arise due to difference in claim language. Conversion of the rejection of claims 20-27 and claims 43-46 from statutory to judicial double patenting is requested.

Regarding claims 29-34, since the Examiner acknowledges that independent claim 28 is subject to judicial rather than statutory double patenting, claims 29-34, which depend from claim 28, should also be afforded the same treatment.

Judicially Created Doctrine of Obviousness-type Double Patenting

Claims 28, 35-40, and 54-56 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over various claims of U.S. Patent 6,757,815. A terminal disclaimer is filed herewith.

Prior Art Rejections

Claim 53 is rejected under 35 U.S.C. § 102(b) as being clearly anticipated by U.S. Patent 5,446,850 to Jeremiah *et al.*

Claim 53 recites:

concurrently comparing (a) a plurality of tag entries, each tag entry comprising a concatenation of a tag identifier and a bank identifier with (b) a plurality of input identifiers, each input identifier comprising a concatenation of an input tag identifier and a respective bank identifier.

The Examiner cites SLOT 314 of Figure 8 as “a plurality of tag entries, each tag entry comprising a concatenation of a tag identifier,” and cites CCL 312 of Figure 8 as “a bank identifier.” Outputs of Decrementer 146 and SLOTREG 133 are cited as “a plurality of input identifiers,” with the output of Decrementer 146 asserted to comprise two bits, a first of which is an input tag identifier and a second of which is a bank identifier, and with the output of SLOTREG 133 asserted to comprise at least two bits, a first of which is also a tag identifier and a second of which is a bank identifier.

Applicant does not concede equivalence on the particular elements cited, but for the purpose of argument, submits that even if the Examiner’s assertions are taken as being correct, a parsing of the claim demonstrates that the claim is not anticipated. The claim recites concurrently comparing (a) with (b). Assuming that the output of Decrementer 146 and the output of SLOTREG 133 each constitute an input identifier of (b), the comparisons are:

- a comparison of the output of SLOTREG 133 (b) to SLOT 314 ($1/2$ of a); and
- a comparison of the output of Decrementer 146 (b) to CCL 312 ($1/2$ of a).

In other words, there is no concurrent comparison to a plurality of tag entries, each tag entry comprising a concatenation of a tag identifier and a bank identifier. Separate comparisons of (b) to SLOT 314 and of (b) to CCL 312 do not constitute a comparison of (b) to a concatenation of 314 and 312. Reconsideration and withdrawal of the § 102 rejection are requested.

Conclusion

The Examiner is invited to contact the undersigned at (202) 220-4209 to discuss any matter concerning this application. As Applicant’s representative and the Examiner were unsuccessful in scheduling a substantive telephone conference prior the filing of this Amendment, Applicant’s representative would welcome the opportunity to work with the Examiner to resolve any issues that the Examiner may wish to further address.

Applicant authorize the Commissioner to charge any fees determined to be due with the exception of the issue fee and to credit any overpayment to Deposit Account No. 11-0600.

Respectfully submitted,
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Dated: April 5, 2005



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